

***Ellisembia appendiculata* sp. nov. from Hainan, China**

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ABSTRACT—*Ellisembia appendiculata* is described and illustrated as a new species from a specimen collected on dead branches of an unidentified broadleaf tree in Hainan Province. The fungus is characterized by distinct, unbranched conidiophores with monoblastic conidiogenous cells that produce distoseptate, obclavate or ellipsoidal conidia with 1–2 filiform, hyaline, aseptate, simple or branched appendages.

KEY WORDS—hyphomycetes, mitosporic fungi, taxonomy

Introduction

Ellisembia was introduced by Subramanian (1992) to accommodate *Sporidesmium*-like species with determinate or irregularly percurrently extending conidiogenous cells that produce distoseptate conidia. Wu & Zhuang (2005) merged *Imicles* Shoemaker & Hambl. (Shoemaker & Hambleton 2001) into *Ellisembia* and expanded the generic concept to include species that produce typically lageniform, ovoid, or doliiform percurrently extending conidiogenous cells. However, Seifert & al. (2011) retained *Imicles* as a separate genus due to the absence of molecular DNA data for the type species of *Ellisembia* and *Imicles*, and this treatment was followed by Su & al. (2016) and Hyde & al. (2019).

Hainan Province (18.17°–20.17°N 108.62°–111.08°E) is an island in southern China, with annual mean temperature of 22–27 °C, and the annual precipitation of 1000–2600 mm. Bawangling National Nature Reserve, located in the southeast of Changjiang Li autonomous county, Hainan Province, has a typical tropical rainforest climate. Among our fungal collections from this region, we found a hyphomycetous fungus that conformed with *Ellisembia* Subram. It is described and illustrated here as a new species, *E. appendiculata*.

Materials and methods

Samples of dead branches were collected from Bawangling National Nature Reserve of Hainan Province, China, and taken to the laboratory in zip-lock plastic bags. Samples were processed and examined following the methods described in Ma & al. (2011). Micromorphological characters were observed using an Olympus SZX10 stereomicroscope and Olympus BX53 microscope, both fitted with Olympus DP80 high definition colour digital cameras to photo-document fungal structures. Conidia were measured at their widest point. The range between minimum and maximum values for microscopic measurements is given. Adobe Photoshop CS5 was used for image processing to assemble photographs into plates. Single spore cultures did not grow on PDA at 25 °C after several attempts and therefore only morphological data are used here. The studied specimens are deposited in the Herbarium of Plant Pathology, Shandong Agricultural University, Taian, China (HSAUP).

Taxonomy

Ellisembia appendiculata J.W. Xia, R.Y. Liu & X.G. Zhang, sp. nov.

FIG. 1

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Differs from other *Ellisembia* spp. by its obclavate or ellipsoidal conidia with 1–2 filiform, hyaline, aseptate, simple or branched appendages.

TYPE: China, Hainan Province: Bawangling National Nature Reserve, on dead stems of an unidentified broadleaf tree, 21 May 2021, R.Y. Liu (Holotype, HSAUP BWL1581).

ETYMOLOGY: *appendiculata*, refers to the conidia that have appendages.

COLONIES on natural substrate effuse, pale brown to brown, hairy. Mycelium partly superficial, partly immersed in the substrate, composed of septate, pale brown, smooth, 2–4 µm diam. CONIDIOPHORES differentiated, single, erect, straight or slightly flexuous, cylindrical, smooth, thick-walled, brown to dark brown, 2–4-septate, 35–60 × 6.5–8 µm. CONIDIOGENOUS CELLS monoblastic, integrated, terminal, brown to dark brown, 15.5–30 × 6–7.5 µm. Conidial secession schizolytic. CONIDIA solitary, acrogenous, obclavate or ellipsoidal, smooth-walled, pale brown to brown, 10–12-distoseptate, 50–72 × 11.5–15 µm; apical cell extended into 1–2 filiform, hyaline, aseptate, simple



FIG. 1. *Ellisembia appendiculata* (holotype, HSAUP BWL1581).
Conidiophores, conidiogenous cells, and conidia.

or branched appendages, 65–120 × 1–3 µm; basal cell conical truncate, darker than other cells, 3.5–5 µm diam. at the base.

COMMENTS – *Ellisembia appendiculata* is morphologically similar to *E. brachypus* (Ellis & Everh.) Subram., *E. filia* W.P. Wu, *E. flagelliformis* (Matsush.) W.P. Wu, and *E. magnibrachypus* (Matsush.) Rajeshk. & S.K. Singh in conidial shape, especially in possessing filiform, hyaline, aseptate appendages (Matsushima 1975, Subramanian 1992, Wu & Zhuang 2005, Rajeshkumar

& al. 2012). However, *E. appendiculata* differs from *E. brachypus*, *E. filia* and *E. magnibrachypus* in its number of conidial distosepta and conidial size, and from *E. flagelliformis* in its wider conidia with fewer distosepta (TABLE 1).

TABLE 1. Morphological comparison of *Ellisembia appendiculata* with similar species. The new species is set in bold font.

SPECIES	CONIDIOPHORES (μm)	CONIDIA		
		SIZE (μm)	SEPTA	APPENDAGES (μm/branching?)
<i>E. appendiculata</i>	35–60 × 6.5–8	50–72 × 11.5–15	10–12	65–120 × 1–3/yes
<i>E. brachypus</i> ²	30–250 × 5–9	50–90 × 10–14	5–8	30–74 × 2–3/no
<i>E. filia</i> ²	15–20 × 4–5	40–50 × 7–8	7–9	≤50 × 0.5–1/no
<i>E. flagelliformis</i> ²	30–65 × 4–5	65–90 × 9–10	11–14	≤40 × 1–3/no
<i>E. magnibrachypus</i> ¹	80–160 × 7–8	48–62 × 12–14	9–10	≤65 long/yes

* Data from ¹ Matsushima (1975); ² Wu & Zhuang (2005).

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